Destination: Japan

Snapshots from an ISS world traveler

Are you the kind of person who dreams of traveling the world and is perfectly comfortable in a foreign environment? Or are you the type who prefers to be in familiar territory? It takes a certain personality type to embark on long journeys to foreign countries with confidence, especially alone.

Amie Allison, an engineer with Japan Manned Space Systems America, Inc., is such an individual. Through her previous positions in the Mission Operations Directorate, she has lived and worked in Russia and Japan.

In fact, Allison has just returned from a three-month-long tour in Tsukuba, Japan, city of the National Space Development Agency of Japan, where she says even from her first visit three years ago, she was drawn to the culture.

"I fell in love with Japan while working on the crew procedures for the Manipulator Flight Demonstrator experiment for STS-85," said Allison, who said she also got a taste of their long work hours during that project. "At that time, I was working very closely with Japanese engineers and they were so interesting and dedicated. I knew at that point I'd like to work there again."

To that end, Allison joined JAMSS America, Inc., an American subsidiary of the prime operations contractor to NASDA for the Japanese Experiment Module, also called "Kibo." There she could use her operations experience from Shuttle Payload Operations and the Houston Support Group in Moscow to support the JEM Flight Control Team.

During her stay, Allison lived in a one-bedroom apartment in Tsukuba, a modern suburb one and a half hours northeast of Tokyo. Her apartment would be considered small by U.S. standards but, Allison says, in Japan it was regarded as a fairly spacious setup for one person. Her refrigerator, only waist high, was larger than many. Slippers lined up in the apartment entranceway, were a subtle hint that this American visitor adheres to the local customs.

Her apartment had a polished wood floor, not tatami – the traditional woven straw common in Japan – and a bed, as compared to a futon frequently used.

Photos by Nicole Cloutier

Amie Allison, shown here in the hurried maze of a crowded Tokyo subway station, enjoys acclimating to foreign cultures as part of her International Space Station travels.

Although she was given the option of a rental car, Allison opted to travel via bicycle, bus, and train, the popular methods of travel among Japanese. Every day she biked her way to the nearby Tsukuba Space Center. The first few weeks at near-freezing temperatures made for less than desirable bike riding conditions, even snowing one day. But in April, the cherry blossoms flowered and their white, fluffy blooms created a soft, pastel canopy over the bike path.

"The cherry blossom season in early April is a huge event for the Japanese and Tsukuba is one of the most beautiful areas to see them," explained Allison.

At work, Allison worked on a laptop next to her Japanese counterparts in a large, open office located just next to the Mission Control Room. She assisted the flight control team with JEM procedures, operations controls to safety hazards, and JEM reference material to support the Japanese ISS assembly flights in 2003. The work day started at 9 a.m. and they formally broke for lunch at 12:15 p.m. Her lunch destination of choice was the on-site cafeteria, which has a variety of Japanese cuisine favorites such as ramen noodles, curry rice, and tempura. The flight control team generally worked well past the "close of business bell" at 5:35 p.m. Allison said frequently her Japanese coworkers would work late into the night.

However, Allison is not all work and no play – and her time in Japan was no exception. Weekends were the opportunity for day trips to other regions of Japan – be it to downtown Tokyo to check out a Sumo match or Kabuki, to the shoreline beaches or to the Hakone region to steal a glimpse of the famed, yet elusive Mount Fuji. On one trip she even joined a group of coworkers for a ski trip to Zao in the northern mountainous region.

"The people are very courteous in Japan, so one thing I really noticed on the slopes is that they stop, mid-slope, to wait for each other," said Allison. "I know this because I was the slowest person in my group!"

One of the highlights of Allison's trip was a cherry blossom viewing party, common during that season. Nearly 30 of her coworkers from the STS-85 MFD project boarded a "yakatabune" boat, which cruised up and down the Sumida River in Tokyo for three hours. Cherry blossom trees laced with pink Japanese lanterns lined the river embankment for miles. Inside the boat, sitting Indian style on a tatami floor, the group celebrated the reunion and feasted on a traditional Japanese dinner complete with tofu, sashimi, saké and miso soup. The boat filled with laughter and reveling once Allison and her American friends, dressed in springtime Kimonos, kicked off the Karaoke. They soon discovered the Japanese are Karaoke experts.

Allison is now back in the states, already preparing for another trip to Japan in the fall. In her words, she says the experience in Japan is adventurous and challenging because there is no support group there for Americans whereas in Russia, NASA has an organized team to assist space program travelers acclimate to the culture. But, she says, her new Japanese coworkers have become her friends and she's eager to see them again.

For now, Allison plans to get her fill of Americana until her next rotation back to Japan – "What I missed most while living in Japan was American breakfasts, Texas' wide open spaces, Houston sunshine, and my car!" ■

NASDA ramps up its JEM flight control team, facility

One of the key responsibilities for the International Space Station's 16 International Partners is to ensure the safety of their own hardware before launch as well as in orbit. For many of the IPs, especially those providing large contributions or modules to the ISS, that means developing their own system to monitor and control their hardware.

To this end, the National Space Development Agency (NASDA), which is delivering the Japanese Experiment Module "Kibo" (meaning hope), is in the midst of developing its own mission support system complete with a Mission Control Room and a 40-person flight control team.

In itself, this may not appear to be a large feat, but for a country whose primary space endeavors until this point have focused on satellite launch and operations, the transition to a multinational, human space program is exciting and challenging.

"NASDA has never had such an integrated team for operations," explained Masazumi Miyake, senior engineer for the Space Station Mission Operations Department, NASDA. "It's a little bit easier this way. We are now implementing a similar process as NASA."

For Japan's numerous satellite missions, the agency's control team did not include technical specialists. If there was an anomaly during a mission, it was documented and forwarded to manufacturing contractors for later investigation. Because it was satellite operations, the timeline for responses was more relaxed. For the ISS, however, NASDA needed to re-evaluate its process and system for information gathering and decision making.

Photos by Nicole Cloutier

Masazumi Miyake

"If we have a malfunction, we need to have the technical information immediately," said Miyake. "NASA developed a database to manage the information, and we are considering the same solution. Because of the manpower restrictions, we've also adopted a more compact operations team and a more integrated management style."

To become familiar with NASA's approach and mission operations support, Miyake and nine other NASDA employees have trained in JSC's Mission Operations Directorate for six months each during the last two years.

"A number of their flight controllers supported the STS-85 MFD mission, so they now have some familiarity with human space flight operations," said Bryan Austin, NASA flight director. "And other controllers supported their unmanned launch operations, but all-in-all they are new to this level of involvement.

"We plan to participate with them in some of their early simulations and already have had four of their flight director candidates rotate through our Flight Director Office. This has already paid dividends since these NASDA flight controllers and flight directors can now better guide the initial development of their flight control team," added Austin.

NASDA is putting its final touches on its new Mission Control Room, which will be the hub for 24-hour JEM operations. It is located in the Space Station Operations Facility at Tsukuba Space Center, about an hour and a half north of Tokyo. The MCR will be supported by a User Operations Area where payload customers can control and monitor experiments, an Operations Planning Room, and an Operations Rehearsal Room which will be used for operator training and integrated simulations.

To further prepare, the teams meet at least twice yearly for a Joint Operations Panel meeting where both NASA MOD and NASDA controllers are represented to resolve technical operations issues.

"I learned it takes many skills to be an effective flight director," said Miyake. "For the actual operations, we won't be able to see the faces and expressions of the people we are working with who are on the loop yet out of the country. So having met them before is extremely valuable. Communications is very important, and it's more than just the language – it's the personal relationship and rapport built with your counterparts in different countries." ■